

Model uncertainty

My outline:

1. The model cannot be any more accurate than the data used to calibrate it.
2. The most uncertain calibration targets were the Snake River reach gain data.
3. All gages used during calibration are rated good (10%) by the USGS.
4. Snake River gains and losses are used to direct where water enters and exits the model.
5. We can only know, at best, within 10% where any stress applied to the aquifer will be realized in the Snake River.

An attempt at a coherent paragraph:

No model can be more accurate than the observations used as calibration targets, and all field observations (calibration targets) contain some uncertainty. With ESPAM, the observations containing the most noise (uncertainty) are the Snake River gain and loss data. These targets were produced by differencing up-stream and down-stream gages (plus accounting for diversions and returns) to compute river seepage into the aquifer (losses) or aquifer contributions to the river (gains). These gain and loss targets dictate where aquifer stresses are realized in the Snake River. The model was calibrated so that aquifer stresses applied during the calibration period (May 1, 1980 to April 30, 2002) were realized in the Snake River as correctly as possible. The precision of this process was limited due to the uncertainty in the river gain and loss observations. The USGS rates the gages used to calculate the river gains and losses as good (10% accurate), thus the model's ability to accurately dictate where a stress will be realized in the Snake River cannot be greater than 10%.